ABSTRACT OF THE DISCLOSURE

A low cost and scalable processes for producing nanostructured LiFe_xM_{1-x}PO₄ and nanostructured LiFe_xM_{1-x}PO₄/C composite powders, where $1 \le x \le 0.1$ and M is a metal cation, such as Mn, Co, Ni, and V. Electrodes made of either nanostructured LiFe_xM_{1-x}PO₄ powders or nanostructured LiFe_xM_{1-x}PO₄/C composite powders exhibit good electrochemical properties. The electronic conductivity of nanostructured LiFe_xM_{1-x}PO₄ powders is enhanced by intimately mixing them with ultrafine carbon particles. Thus, the use of nanostructured LiFe_xM_{1-x}PO₄/C composite powders will lead to high power density, low cost and environmentally friendly rechargeable Li-ion batteries.

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